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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,925	08/31/2001	Olga Valerievna Koshkina	STL3054	2253

7590 06/16/2004

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EXAMINER

KAPADIA, VARSHA A

ART UNIT	PAPER NUMBER
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2651

DATE MAILED: 06/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/944,925

Applicant(s)

KOSHKINA ET AL.

Examiner

Varsha A Kapadia

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5,8-13,15,17 and 25-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5,8-13,15,17 and 25-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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This office action is responsive to the amendment filed on March 10, 2004.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, 4, 8-13, 15, 17, 25-36 and 38-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (6,384,995) in view of Abraham et al (5,527,110).

With regards to claim 1, Smith discloses a method for analyzing a data storage apparatus containing a transducer head (see fig.1 elements 107,108) positioned adjacent a data storage media surface (see fig.1 elements 101-102), the method comprising steps of detecting a defective region of the surface by combining plurality of readback signals received during respective pass (see fig.8 elements 804-807).

Smith fails to disclose step of imaging a characteristic size of the defective region as defined in the claimed language.

Abraham et al., however discloses such for the purpose of analyzing the surface of a data storage medium, see for example figs. 4A and 4B, col.5 lines 14-34 and col.6 lines 14-31.

It would have been obvious to one of ordinary skilled in the art at the time this invention was made to modify the disclosure of Smith with the above teachings from Abraham et al in order to provide a data storage apparatus having capability of imaging a characteristic size of the defective region to analyze and map the locations of the small variations on a surface of the storage medium.

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With regards to claim 2, Smith discloses step of categorizing the defective region by comparing the size of the defective region to a plurality of category profile (see col.3 lines 11-34).

With regards to claims 4 and 10, Smith defines that the category has an identifier indicating the defects in the magnetic recording layer (scratch/corrosion) see col.8 lines 22-25.

With regards to claims 8-9, see Abraham et al on col.5 14-34, wherein display of the three dimensional data includes X and Y coordinate associated with a corresponding Z coordinate relating to a strength of the readback signal. Abraham et al is relied upon for the same reasons discussed above in this office action.

With regards to claims 11 and 12, Smith discloses step of modifying a list of bad sectors and retaining the modified list in the data storage apparatus (see col.10 lines 51 to 59).

With regards to claim 13, Smith further discloses steps of assigning a value to each of the defective region and reworking the data storage apparatus if an aggregation of the assigned values exceeds a predetermined threshold (see abstract and col.10 lines 51-59).

With regards to claim 15, Smith further discloses that the method steps as discussed with respect to claims 1 and 13 are applicable upon a multiplicity of other storage device as claimed (see for example fig.1, col.5 lines 4-26 and col.10 lines 51-59, wherein Smith also discloses capability of rejecting drive that contains larger defects).

With regards to claim 17, see Smith in fig.1 elements 104, 109 and col.4 lines 22-28.

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Claims 25-36 and 38-42 are drawn to the apparatus of using the corresponding method recited in claims 1-2, 4, 8-13, 15, 17, respectively. Therefore apparatus claims 25-36 and 38-42 correspond to method claims 1-2, 4, 8-13, 15, 17 and are rejected for the same reasons of obviousness as used above.

Claims 31 and 35 further specify the respective dimension of the scratch, i.e. "... a length is greater than a width by a factor of about 2.5". However, defining such dimension is considered as routine engineering capability and no unexpected are results are to occur. Claims 31 and 35 are rejected for the same reasons of obviousness as used above.

Claims 5 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Abraham et al as applied to claims 1-2, 4, 8-13, 15, 17, 25-36 and 38-42 above, and further in view of Bang (6,151,180).

With regards to claims 5 and 37, Smith in view of Abraham et al discloses the invention as discussed above in this office action, but fails to further specify that he defective region is unreliable if a ratio defined by a size of a portion of the defective region with a less than expected readback signal strength...

However, such is disclosed by Bang (see col.3 lines 33-67).

It would have been obvious to one of ordinary skill in the art at the time this invention was made to modify Smith in view of Abraham et al with the above teaching from Bang in order to provide a storage apparatus having a capability of accurately determining which specific portion of the surface is unreliable and hence to increase the reliability of the storage medium.

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Response to Remarks

Applicant's arguments with respect to claims 1-2, 4-5, 8-13, 15, 17, 25-42 have been considered but are moot in view of the new ground(s) of rejection.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Varsha A Kapadia whose telephone number is (703) 305-4198. The examiner can normally be reached on Mon-Wed from 6:30 AM to 2:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Hudspeth can be reached on (703) 308-4825. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



VK



DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER